

# SHARP

## SUPPLEMENTAL SERVICE MANUAL

S94M2R2130JS/



**OVER THE RANGE  
MICROWAVE OVEN**

**MODEL R-2130JS**

In the interest of user-safety the oven should be restored to its original condition and only parts identical to those specified should be used.

**WARNING TO SERVICE PERSONNEL:** Microwave ovens contain circuitry capable of producing very high voltage and current. Contact with the following parts may result in a severe, possibly fatal, electrical shock. (Inverter unit that includes High Voltage Capacitor, High Voltage Power Transformer, High Voltage Rectifier and Heat sink etc., and Magnetron, High Voltage Harness etc..)

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**SHARP CORPORATION**

This document has been published to be used for after sales service only.

The contents are subject to change without notice.

## **PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY**

- (a) Do not operate or allow the oven to be operated with the door open.
- (b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
- (c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
- (d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

## **BEFORE SERVICING**

Before servicing an operative unit, perform a microwave emission check as per the Microwave Measurement Procedure outlined in this service manual.

If microwave emissions level is in excess of the specified limit, contact SHARP ELECTRONICS CORPORATION immediately @1-800-237-4277.

If the unit operates with the door open, service person should 1) tell the user not to operate the oven and 2) contact SHARP ELECTRONICS CORPORATION and Food and Drug Administration's Center for Devices and Radiological Health immediately.

Service personnel should inform SHARP ELECTRONICS CORPORATION of any certified unit found with emissions in excess of  $4\text{mW}/\text{cm}^2$ . The owner of the unit should be instructed not to use the unit until the oven has been brought into compliance.

## **DANGER CAUTION HIGH VOLTAGE**

Do not energize a microwave oven with the outer case cabinet removed, because a microwave oven generates High Voltage in the circuit.

If you intend to operate the oven employing the high frequency switching power converter circuit, you should take special precautions to avoid an electrical shock hazard.

The high voltage transformer, high voltage capacitor and high voltage diode have energized high voltage potential approx. 8 KV.

The aluminium heat sink is connected to the switching power transistor Collector pole, and has an energized high voltage potential approx. 650V peak.

**DO NOT ACCESS THE HIGH VOLTAGE TRANSFORMER, HIGH VOLTAGE CAPACITOR, HIGH VOLTAGE DIODE AND HEAT SINK WHEN THE POWER SUPPLY IS CONNECTED TO AN ELECTRICAL OUTLET.**

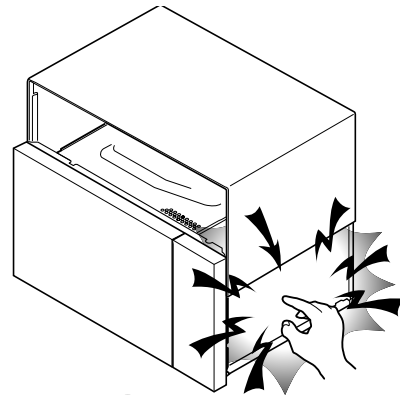
## WARNING TO SERVICE PERSONNEL

Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock.

(Example)


Inverter unit that includes High Voltage Capacitor, High Voltage Power Transformer, High Voltage Rectifier, Heat sink etc., and Magnetron, High Voltage Harness etc..

Read the Service Manual carefully and follow all instructions.



**Don't Touch !  
Danger High Voltage**

### Before Servicing

1. Disconnect the power supply cord , and then remove outer case.
2. Open the door and block it open.
3. To discharge high voltage capacitor, wait for 60 seconds.

#### **WARNING: RISK OF ELECTRIC SHOCK. DISCHARGE THE HIGH-VOLTAGE CAPACITOR BEFORE SERVICING.**

The high-voltage capacitor remains charged about 60 seconds after the oven has been switched off. Wait for 60 seconds and then short-circuit the connection of the high-voltage capacitor (that is the connecting lead of the high-voltage rectifier) against the chassis with the use of an insulated screwdriver.

Whenever troubleshooting is performed the power supply must be disconnected. It may in, some cases, be necessary to connect the power supply after the outer case has been removed, in this event,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. To discharge high voltage capacitor, wait for 60 seconds.
4. Disconnect the leads to the primary of the inverter unit.
5. Ensure that these leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

**When the testing is completed,**

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. To discharge high voltage capacitor, wait for 60 seconds.
4. Reconnect the leads to the primary of the inverter unit.
5. Reinstall the outer case (cabinet).
6. Reconnect the power supply cord after the outer case is installed.
7. Run the oven and check all functions.

### After repairing

1. Reconnect all leads removed from components during testing.
2. Reinstall the outer case (cabinet).
3. Reconnect the power supply cord after the outer case is installed.
4. Run the oven and check all functions.

Microwave ovens should not be run empty. To test for the presence of microwave energy within a cavity, place a cup of cold water on the oven turntable, close the door and set the power to HIGH and set the microwave timer for two (2) minutes. When the two minutes has elapsed (timer at zero) carefully check that the water is now hot. If the water remains cold carry out **Before Servicing** procedure and re-examine the connections to the component being tested.

When all service work is completed and the oven is fully assembled, the microwave power output should be checked and microwave leakage test should be carried out.

## SERVICING FOR INVERTER UNIT

### WARNING

This inverter unit contains circuitry capable of producing high voltage and high current. Contact with any part of the high voltage will result in electrocution.

DO NOT ACCESS ANY PARTS OF INVERTER UNIT WITH POWER SUPPLY CONNECTED.  
DO NOT OPERATE INVERTER UNIT ITSELF.

It is dangerous because this unit contains high voltage components.

## MICROWAVE MEASUREMENT PROCEDURE

### A. Requirements:

- 1) Microwave leakage limit (Power density limit): The power density of microwave radiation emitted by a microwave oven should not exceed  $1\text{ mW/cm}^2$  at any point 5cm or more from the external surface of the oven, measured prior to acquisition by a purchaser, and thereafter (through the useful life of the oven),  $5\text{ mW/cm}^2$  at any point 5cm or more from the external surface of the oven.
- 2) Safety interlock switches: Primary interlock switch shall prevent microwave radiation emission in excess of the requirement as above mentioned, secondary interlock switch shall prevent microwave radiation emission in excess of  $5\text{ mW/cm}^2$  at any point 5cm or more from the external surface of the oven.

### B. Preparation for testing:

**Before beginning the actual measurement of leakage, proceed as follows:**

- 1) Make sure that the actual instrument is operating normally as specified in its instruction booklet.

Important:

Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens, 21 CFR 1030.10(c)(3)(i), must be used for testing.

- 2) Place the oven tray in the oven cavity.
- 3) Place the load of  $275 \pm 15\text{ ml}$  (9.8 oz) of tap water initially at  $20 \pm 5\frac{1}{2}\text{C}$  ( $68\frac{1}{2}\text{F}$ ) in the center of the oven cavity. The water container shall be a low form of 600 ml (20 oz) beaker with an inside diameter of approx. 8.5 cm (3-1/2 in.) and made of an electrically nonconductive material such as glass or plastic. The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
- 4) Set the cooking control on Full Power Cooking Mode
- 5) Close the door and select a cook cycle of several minutes. If the water begins to boil before the survey is completed, replace it with 275 ml of cool water.

### C. Leakage test:

Closed-door leakage test (microwave measurement)

- 1) Grasp the probe of the survey instrument and hold it perpendicular to the gap between the door and the body of the oven.
- 2) Move the probe slowly, not faster than 1 in./sec. (2.5 cm/sec.) along the gap, watching for the maximum indication on the meter.
- 3) Check for leakage at the door screen, sheet metal seams and other accessible positions where the continuity of the metal has been breached (eg., around the switches, indicator, and vents).  
While testing for leakage around the door pull the door away from the front of the oven as far as is permitted by the closed latch assembly.
- 4) Measure carefully at the point of highest leakage and make sure that the highest leakage is no greater than  $4\text{ mW/cm}^2$ , and that the primary interlock switch and secondary interlock switch do turn the oven OFF before any door movement.

NOTE: After servicing, record data on service invoice and microwave leakage report.

# SERVICE MANUAL

## SHARP

OVER THE RANGE  
MICROWAVE OVEN

R-2130JS

### FOREWORD

This Manual has been prepared to provide Sharp Electronics Corp. Service Personnel with Operation and Service Information for the SHARP OVER THE RANGE MICROWAVE OVEN, R-2130JS.

It is recommended that service personnel carefully study the entire text of this manual so that they will be qualified to render satisfactory customer service.

Check the interlock switches and the door seal carefully. Special attention should be given to avoid electrical shock and microwave radiation hazard.

#### WARNING

Never operate the oven until the following points are ensured.

- (A) The door is tightly closed.
- (B) The door brackets and hinges are not defective.
- (C) The door packing is not damaged.
- (D) The door is not deformed or warped.
- (E) There is no other visible damage with the oven.

Servicing and repair work must be carried out only by trained service personnel.

#### DANGER

**Certain initial parts are intentionally not grounded and present a risk of electrical shock only during servicing. Service personnel - Do not contact the following parts while the appliance is energized;**

**Inverter unit that includes High Voltage Capacitor, High Voltage Power Transformer, High Voltage Rectifier, Heat sink, etc., and Magnetron, High Voltage Harness etc.;**  
**If provided, Vent Hood, Fan assembly, Cooling Fan Motor.**

All the parts marked “\*” on parts list are used at voltages more than 250V.

Removal of the outer wrapper gives access to voltage above 250V.

All the parts marked “Δ” on parts list may cause undue microwave exposure, by themselves, or when they are damaged, loosened or removed.

PRODUCT DESCRIPTION

GENERAL INFORMATION

PARTS LIST

SHARP ELECTRONICS CORPORATION

SHARP PLAZA, MAHWAH,  
NEW JERSEY 07430-2135

## PRODUCT SPECIFICATION

ITEM	DESCRIPTION
Power Requirements	120 Volts / 14 Amperes 60 Hertz Single phase, 3 wire grounded
Power Output	1200 watts (IEC TEST PROCEDURE) Operating frequency of 2450MHz
Case Dimensions	Width 29-15/16" Height 17" Depth 15- 9/16"
Cooking Cavity Dimensions	Width 22-9/16" Height 10-9/16" Depth 15"
2.1 Cubic Feet	
Hood lamp	2 bulbs, 20W x 2, Incandescent light bulbs
Hood fan	Approx. 300 C.F.M./ 270 C.F.M.
Control Complement	<p>Touch Control System Clock ( 1:00 - 12:59 ) Timer (0 - 99 min. 99 seconds) Microwave Power for Variable Cooking</p> <p>Repetition Rate;</p> <p>P-HI ..... Full power throughout the cooking time  P-90 ..... approx. 90% of Full Power  P-80 ..... approx. 80% of Full Power  P-70 ..... approx. 70% of Full Power  P-60 ..... approx. 60% of Full Power  P-50 ..... approx. 50% of Full Power  P-40 ..... approx. 40% of Full Power  P-30 ..... approx. 30% of Full Power  P-20 ..... approx. 20% of Full Power  P-10 ..... approx. 10% of Full Power  P-0 ..... No power throughout the cooking time</p> <p><b>R-2130JS</b>  SENSOR CENTER pads, MEAL TIME pads  CUSTOM HELP pad, KEEP WARM PLUS pad, EASY DEFROST pad  SHORT CUTS pads, Numer selection pads, POWER LEVEL pad  Timer/Clock pad, Stop/Clear pad, START/Minute Plus pad  FAN: HI/LO, LIGHT: HI/LO</p>
Oven Cavity Light	20W x 1 Incandescent light bulb
Safety Standard	UL Listed                      FCC Authorized DHHS Rules, CFR, Title 21, Chapter 1, Subchapter J
Weight	Approx. 44 lbs.

## GENERAL INFORMATION

### GROUNDING INSTRUCTIONS

This oven is equipped with a three prong grounding plug. It must be plugged into a wall receptacle that is properly installed and grounded in accordance with the National Electrical Code and local codes and ordinances.

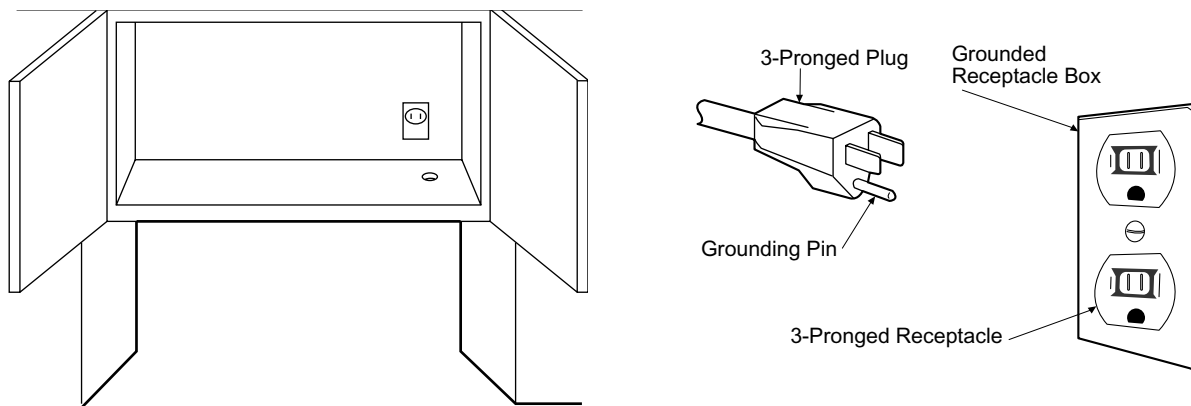
In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.

**WARNING: Improper use of the grounding plug can result in a risk of electric shock.**

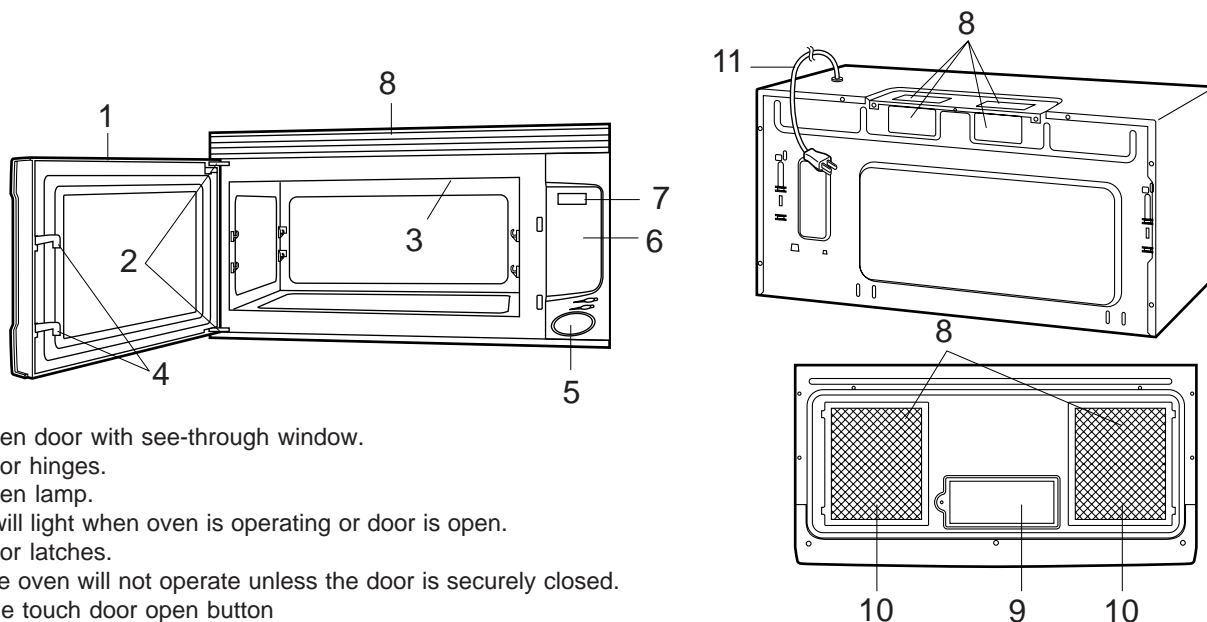
#### Electrical Requirements

The oven is equipped with a 3-prong grounding plug. **DO NOT UNDER ANY CIRCUMSTANCES CUT OR REMOVE THE GROUNDING PIN FROM THE PLUG.**

The power supply cord and plug must be connected to a separate 120 Volt AC, 60 Hz, 15 Amp. or more dedicated line, using a grounded receptacle. The receptacle should be located inside the cabinet directly above the Microwave Oven/Hood system mounting location.



### OVEN DIAGRAM



1. Oven door with see-through window.
2. Door hinges.
3. Oven lamp.  
It will light when oven is operating or door is open.
4. Door latches.  
The oven will not operate unless the door is securely closed.
5. One touch door open button
6. Auto-Touch control panel.
7. Timer display: Digital display, 99 minutes 00 seconds.
8. Ventilation openings.
9. Light Cover.
10. Grease filters.
11. Power supply cord



R-2130JS

**NOTE:**

Some one-touch cooking features such as "MINUTE PLUS" are disabled after three minutes when the oven is not in use. These features are automatically enabled when the door is opened and closed or the STOP/CLEAR pad is pressed.



## PARTS LIST

**Note: The parts marked “Δ” may cause undue microwave exposure.**

**The parts marked “\*” are used in voltage more than 250V.**

**“§” MARK: PARTS DELIVERY SECTION**

REF. NO.	PART NO.	§	DESCRIPTION	Q'TY	CODE
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### ELECTRIC PARTS

* Δ*	1- 1	DPWBFC398WRUZ	M	Inverter unit	1	BF
	1- 2	RV-MZA328WRZZ	M	Magnetron	1	BA
	1- 3	FACADB011MRE0	M	Power supply cord	1	AQ
	1- 4	RMOTDA259WRZZ	M	Stirrer motor	2	AG
	1- 5	RTHM-A135WRZZ	M	Thermal cut-out (Oven) Open at 145°C	1	AD
	1- 6	RTHM-A136WRZZ	M	Thermal cut-out (Hood fan) N.O. Close at 60°C Open at 45°C	1	AD
	1- 7	QSOCLB010MRE0	M	Lamp socket	3	AD
	1- 8	RLMPTA086WRZZ	M	Oven lamp and hood lamps	3	AG
	1- 9	QFSHDB003MRE0	M	Fuse holder	1	AD
	1-10	QSW-MA085WRE0	M	Primary interlock/ Secondary interlock/ stop switches	3	AE
	1-11	FFS-BA016/KIT	M	Monitor switch (V-16G-2C25) with fuse (20A) assembly	1	AF
	1-12	FMOTEA489WRKZ	M	Hood fan motor	1	BB
	1-13	RMOTEB033MRE0	M	Fan motor	1	AR
	1-14	FDTCTA233WRKZ	M	Humidity sensor	1	AU

### CABINET PARTS

	2- 1	LSTY-B027MRP0	M	Rear stay	1	AF
	2- 2	PDIF-B041MRF0	M	Hood louver	1	AT
	2- 3	GDAI-B073MRP0	M	Base plate R	1	AL
	2- 4	HDEC-B001MRF0	M	Bottom sash	1	AN
	2- 5	GCABUB131MRP0	M	Outer case cabinet	1	BA
	2- 6	TMAPCB080MRR0	M	Schematic diagram	1	AB
	2- 7	FANGKB019MRY0	M	Hood lamp glass assembly	1	AY
	2- 8	PCOVBP111MRT0	M	Base cover	1	AV
	2- 9	PCUSUB076MRP0	M	Cabinet cushion	1	AA
	2-10	LANG-B007MRP0	M	Bottom sash angle	1	AK

### CONTROL PANEL PARTS

	3- 1	CPWBFB102MRK0	M	Control unit	1	BE
	3- 2	XEPSD30P08XS0	M	Screw; 3mm x 8mm	4	AA
	3- 3	LANG-B005MRP0	M	Key fixing angle	1	AG
	3- 4	PSHEPB185MRR0	M	Key unit	1	AV
	3- 5	HPNLCB203MRF0	M	Control panel mold	1	AH
	3- 6	HDEC-B009MRF0	M	Control panel sash	1	AD
	3- 7	FBTN-B002MRY0	M	Select button	1	AD
	3- 8	PSHEPB177MRE0	M	Select button rubber	1	AC
	3- 9	FDECAB055MRK0	M	Open button	1	AD
	3- 10	MSPRCA045WRE0	M	Button spring	1	AA

### OVEN PARTS

	4- 1	LSTPPB047MRF0	M	Door stopper	1	AB
	4- 2	LANGTB055MRP0	M	Chassis support	2	AD
	4- 3	FGLSPB001MRY0	M	Table tray assembly	1	BK
	4- 4	FFAN-B014MRY0	M	Stirrer fan assembly	2	AN
	4- 5	PDUC-B138MRF0	M	Magnetron duct	1	AN
	4- 6	MLEVPB016MRF0	M	Open lever	1	AD
	4- 7	*****	M	Oven cavity (Not replaceable part)	1	--
	4- 8	MSPRCB001MRE0	M	Shield spring	1	AA
	4- 9	PHOK-B018MRF0	M	Latch hook	1	AF
	4-10	FANGTB007MRY0	M	Unit mounting plate assembly	1	AS
	4-11	NFANJA029WRE0	M	Fan blade	1	AN
	4-12	LBSHC0037WRE0	M	Cord bushing	1	AB
	4-13	MLEVFB008MRP0	M	Mounting lever	2	AC
	4-14	PDUC-B136MRP0	M	Hood intake duct R	1	AM

REF. NO.	PART NO.	§	DESCRIPTION	Q'TY	CODE
4-15	LANG-B006MRP0	M	Hood lamp mount	1	AF
4-16	MSPRTA046WRE0	M	Latch spring	2	AB
4-17	DPLT-B001MRK0	M	Distribution plate assembly	1	AU
4-18	PDUC-B133MRFO	M	Hood duct R	1	AL
4-19	PDUC-B134MRFO	M	Hood duct L	1	AL
4-20	PDUC-B137MRFO	M	Fan duct	1	AG
4-21	PDUC-B117MRFO	M	Orifice	1	AC
4-22	NSFTPB011MRFO	M	Left stirrer shaft	1	AE
4-23	NGERHB001MRFO	M	Stirrer motor gear	1	AF
4-24	LANGTB065MRP0	M	Motor mounting angle	1	AE
4-25	FSFTTB001MRE0	M	Stirrer shaft assembly	1	AM
4-26	LHLD-B024MRFO	M	Rack holder	4	AF
4-27	LHLD-B025MRFO	M	Left rear rack holder	2	AB
4-28	LHLD-B026MRFO	M	Right rear rack holder	2	AB
4-29	PDUC-B135MRFO	M	Center duct	1	AF
4-30	LANGTB066MRPOA	M	Oven lamp angle	1	AD
4-31	PFILWB005MRP0	M	Lamp filter	1	AB

## DOOR PARTS

Δ	5	CDORFB381MRK0	M	Door assembly	1	BN
Δ	5- 1	FDORFB081MRT0	M	Door panel assembly	1	AX
	5- 2	FCOV-B283MRK0	M	Door frame assy	1	BG
	5- 3	PSHEPB143MRE0	M	Sealer film	1	AG
	5- 4	LSTPPB021MRFO	M	Latch head	1	AD
	5- 5	MSPRTA046WRE0	M	Latch spring	1	AB
	5- 6	GCOVHB048MRFO	M	Choke cover	1	AK
	5- 7	XCPSD40P08000	M	Screw : 4mm x 8mm	4	AA

## MISCELLANEOUS

	6- 1	CFZK-B603MRK0	M	Installation material assembly	1	AG
	6- 1-1	LBSHC0040MRE0	M	Grommet	1	AC
	6- 1-2	LX-BZ0195WRE0	M	Toggle screw	4	AC
	6- 1-3	LX-MZB001MRE0	M	Cord holder	1	AB
	6- 1-4	XBRSD50P60000	M	Screw : 5mm x 60mm	2	AA
	6- 1-5	XOTSE40P12000	M	Screw : 4mm x 12mm	8	AA
	6- 1-6	XTSSD50P35000	M	Screw : 5mm x 35mm	6	AA
	6- 1-7	XWHS050-16300	M	Washer	2	AA
	6- 2	UAMI-B012MRM0	M	Rack	1	AQ
	6- 3	TINSEB382MRK0	M	Operation manual	1	AF
	6- 4	TINSKB092MRRO	M	Top and Wall template	1	AD
	6- 5	FW-VZB233MRE0	M	Oven lamp harness	1	AP
	6- 6	FW-QZB012MRE0	M	High voltage wire assembly	1	AG
	6- 7	FW-VZB231MRE0	M	Stop/ PWM wire harness	1	AP
	6- 8	TCAUAB055MRRO	M	DHHS service caution label	2	AD
	6- 9	TCAUAB050MRRO	M	Monitor caution label	1	AD
	6-10	TCAUAB048MRRO	M	DHHS/GRD/CAUTION label	1	AD
	6-11	PCUSUB659MRP0	M	Cushion	1	AB
	6-12	PFIL-B009MRE0	M	Charcoal filter	1	AH
	6-13	PFIL-B008MRE0	M	Grease filter	2	AH
	6-14	FFTA-B005MRK0	M	Exhaust damper assembly	1	AH
	6-16	QW-VZB012MRE0	M	Sensor ground wire	1	AC
	6-17	LANG-B004MRP0	M	Scale plate	2	AE
	6-19	FW-VZB230MRE0	M	Main wire harness	1	AP

## SCREWS,NUTS AND WASHERS

	7- 1	XHTSD50P08000	M	Screw : 5mm x 8mm	4	AA
	7- 2	XOTSE40P12000	M	Screw : 4mm x 12mm	28	AA
	7- 3	XHTSD40P08RV0	M	Screw : 4mm x 8mm	4	AA
	7- 4	LX-CZB025MRE0	M	Special screw	3	AA
	7- 5	LX-CZ0052WRE0	M	Special screw	2	AA
	7- 6	XOTSD40P12000	M	Screw : 4mm x12mm	4	AA
	7- 7	XCBSD30P08000	M	Screw : 3mm x 8mm	2	AA
	7- 7	XCBSD30P08000	M	Screw : 3mm x 8mm	5	AA
	7- 8	XCBSD40P08000	M	Screw : 4mm x 8mm	6	AA
	7- 9	XOTSD40P08000	M	Screw : 4mm x 8mm	9	AA

## HOW TO ORDER REPLACEMENT PARTS

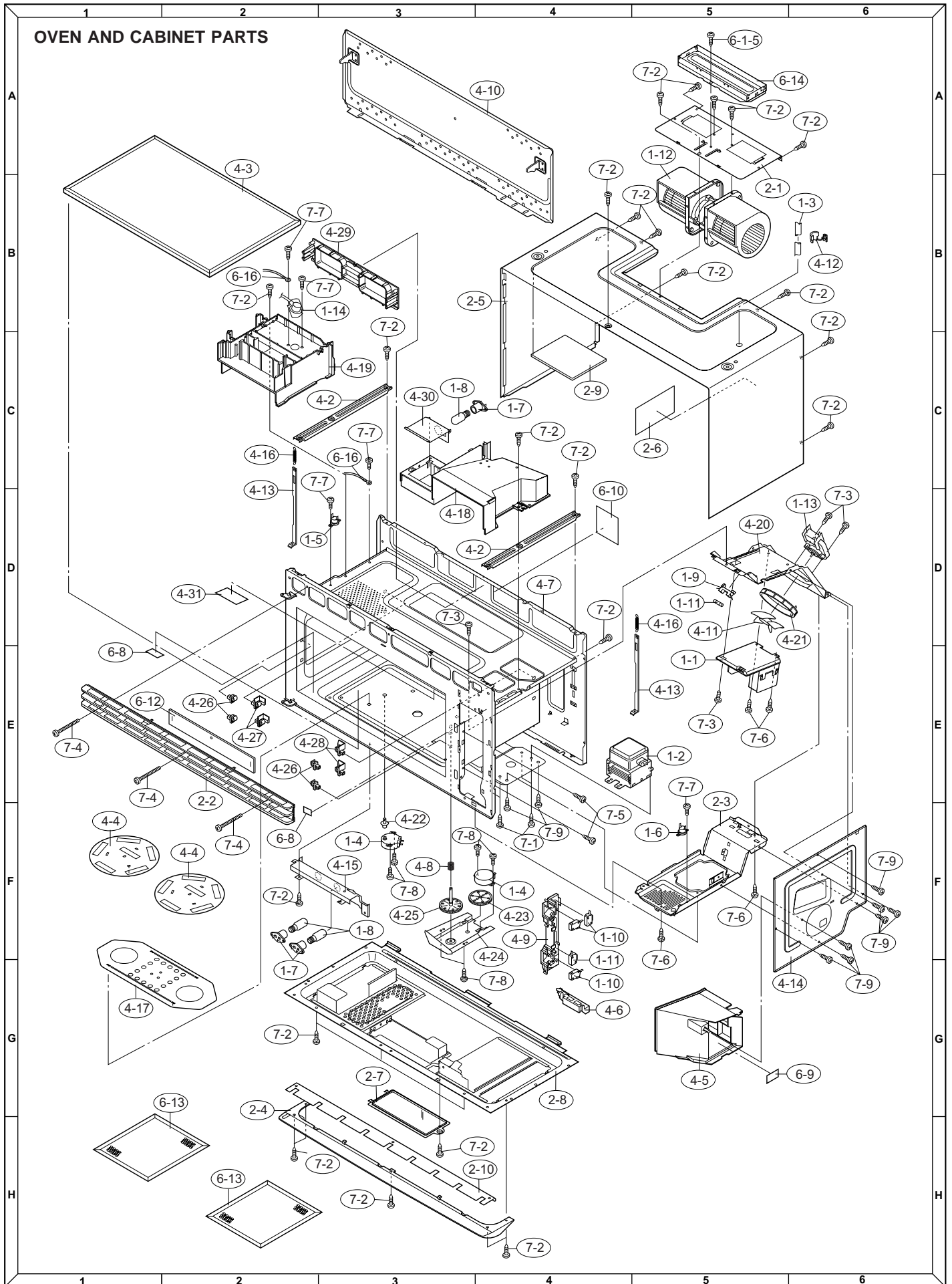
To have your order filled promptly and correctly, please furnish the following information.

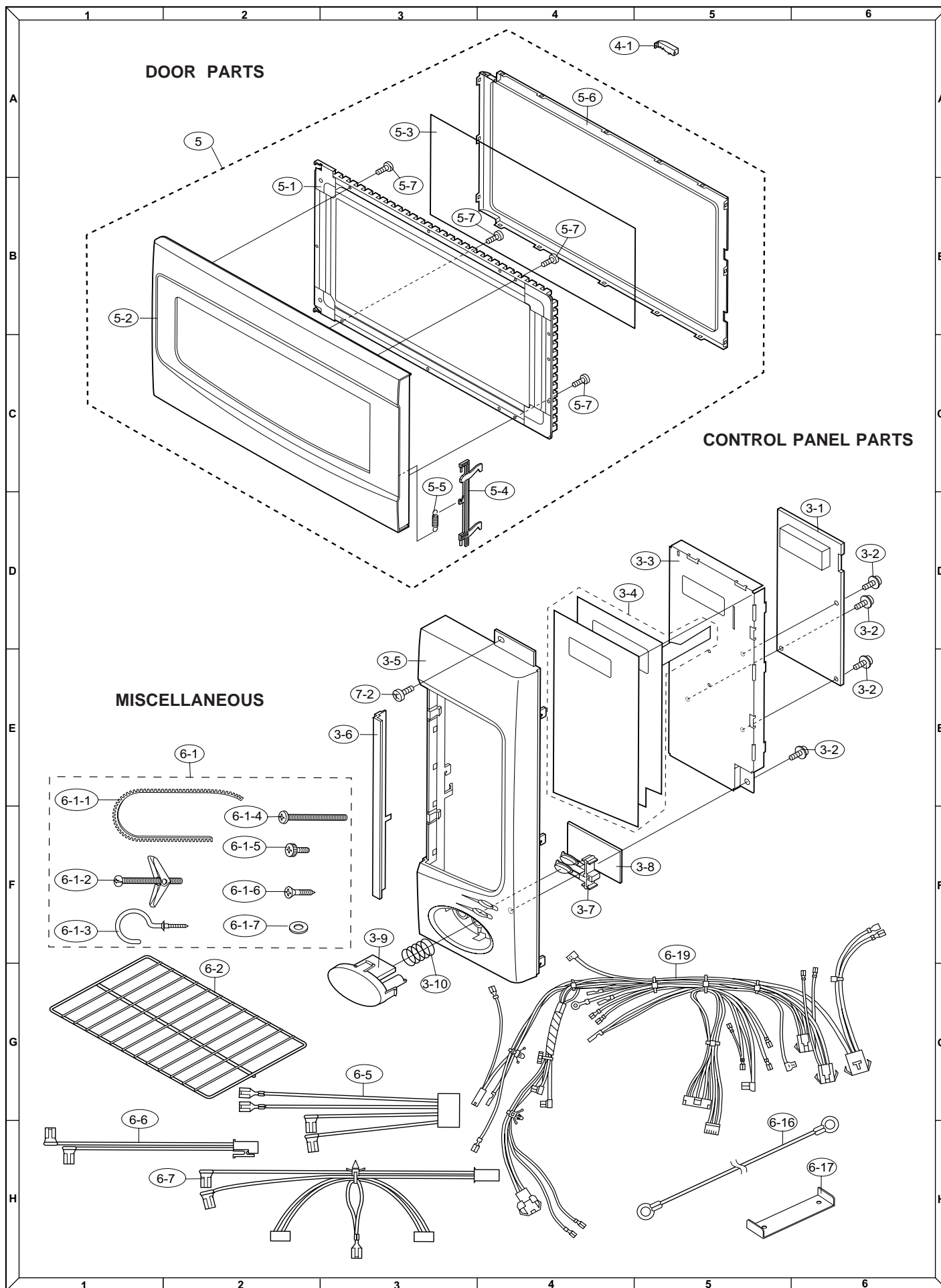
1. MODEL NUMBER      2. REF. NO.      3. PART NO.      4. DESCRIPTION

Order Parts from the authorized SHARP parts Distributor for your area.

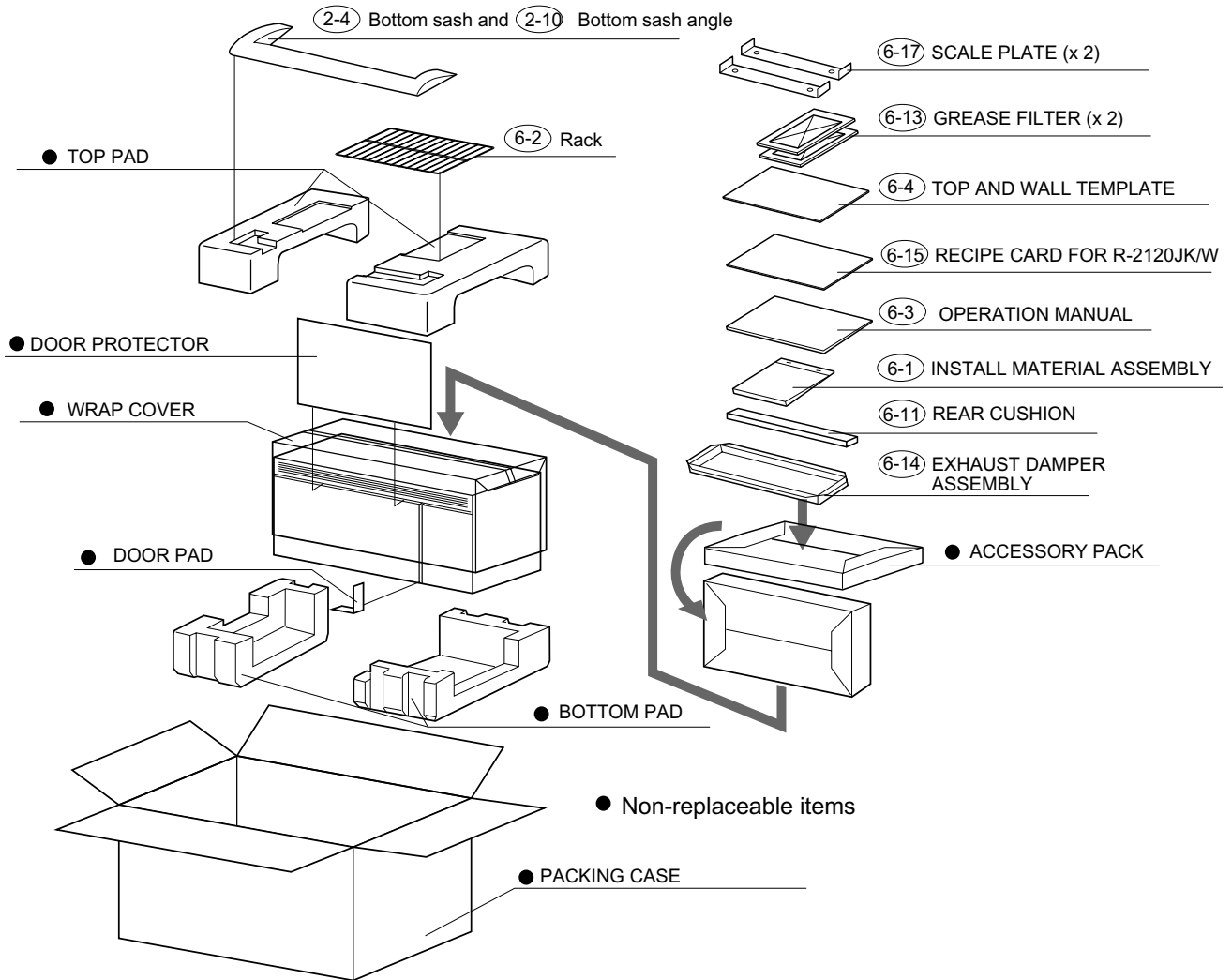
Defective parts requiring return should be returned as indicated in the Service Policy.

## OVEN AND CABINET PARTS





# PACKING AND ACCESSORIES



## NOTES

## NOTES

# SHARP

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